

Notice of Allowability

Application No.

10/041,775

Examiner

S. Devi, Ph.D.

Applicant(s)

BROWN ET AL.

Art Unit

1645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicants' amendment filed 05/18/06.
2. ☒ The allowed claim(s) ~~is/are~~ 22-25, now renumbered as claims 1-4 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying Indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 05/18/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

ATTACHMENT TO NOTICE OF ALLOWABILITY

Request for Continued Examination

1) A request for continued examination under 37 C.F.R. 1.114, including the fee set forth in 37 C.F.R. 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 C.F.R. 1.114, and the fee set forth in 37 C.F.R. 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 C.F.R. 1.114. Applicants' submission filed on 05/18/06 has been entered.

Applicants' Amendment

2) Acknowledgment is made of Applicants' amendment filed 05/18/06 in response to the final Office Action mailed 04/18/05. With this, Applicants have amended the claims.

Examiner's Amendment

3) An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to Applicants, an amendment may be filed as provided by 37 C.F.R. 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee. The authorization to prepare this Examiner's amendment was provided by Mr. Aaron B. Schulman in a telephonic interview on 03 August 2006.

This application has been amended as indicated below:

(B) Claims 17-21 have been canceled.

(C) New claims 22-25 have been added as set forth below:

--Claim 22 (New). A method of suppressing or modulating a deleterious T cell-mediated immune response in a human or animal patient comprising administering to said patient an isolated *Staphylococcus aureus* Map protein having the amino acid sequence of SEQ ID NO: 2 in an amount effective to suppress or modulate said deleterious T cell-mediated immune response in said patient.

Claim 23 (New). The method of claim 22, wherein the deleterious T cell-mediated immune response is delayed-type hypersensitivity (DTH).

Claim 24 (New). A method of treating a pathological condition associated with overstimulation of T cells in a human or animal patient comprising administering to said patient an isolated *Staphylococcus aureus* Map protein having the amino acid sequence of SEQ ID NO: 2 in an amount effective to treat said condition in said patient.

Claim 25 (New). The method of claim 24, wherein the pathological condition associated with overstimulation of T cells is staphylococcal toxic shock syndrome.--

(C) The specification of the instant application has been amended as indicated below.

(i) The paragraph beginning at line 9 of page 10 of the specification is replaced with the following:

--In carrying out the method of the present invention, isolation and/or purification of the Map protein or of the Map19 protein, or other active fragments or domains of the Map protein, can be accomplished in a number of suitable ways as would be recognized by one skilled in the art. For example, both the Map protein and the Map19 protein may be produced recombinantly using conventional techniques well known in the industry. With regard to the Map19 protein (SEQ ID NO: 2), one such suitable method would be through expression in *E. coli* (e.g., JM101 from Qiagen®, Chatsworth, CA) harboring the appropriate plasmid (11-16). In this method, *E. coli* was grown at 37° C in LB containing the appropriate antibiotics until they reached an A₆₀₀ of 0.6 (17). Isopropyl-β-D-thiogalactopyranoside (IPTG) (Life Technologies) was added to a final concentration of 0.2 mM, and the cells were incubated at 37°C for an additional 4 hours. Cells from a 1 L culture were harvested by centrifugation and resuspended in 10 ml "binding buffer" (BB) (20 mM Tris HCl, 0.5 M NaCl, 15 mM imidazole, pH 8.0) and lysed in a French pressure cell at 11,000 pounds/inch² (13). The lysate was centrifuged at 40,000 x g for 15 min and the supernatant filtered through a 0.45 μm filter. A 1 ml iminodiacetic acid ~~Sepharose~~ SEPHAROSE column (Sigma, St. Louis, MO) was charged with 75 mM NiCl₂·6H₂O and equilibrated with BB. The filtered supernatant was applied to the column and washed with 10 volumes of BB, then 10 volumes of BB containing 60 mM imidazole. The bound proteins were eluted with BB containing 200 mM imidazole, dialyzed against PBS containing 10 mM EDTA, then dialyzed against PBS (13). Protein concentrations were determined by the Bicinchoninic Acid (BCA) Protein Assay (Pierce) and proteins were stored at -20° C until use.--

(ii) The paragraph beginning at line 14 of page 28 of the specification has been replaced with the following:

--Expression and Purification of Recombinant Proteins

Recombinant Map19, DbpA SdrF, M55, CNA, ACE19 and ACE40 were expressed in *E. coli* (JM101) (Qiagen®, Chatswoth, CA) harboring the appropriate plasmid (11-16). *E. coli* was grown at 37° C in LB containing the appropriate antibiotics until they reached an A₆₀₀ of 0.6 (17).

Isopropyl- β -D-thiogalactopyranoside (IPTG) (Life Technologies) was added to a final concentration of 0.2 mM, and the cells were incubated at 37° C for an additional 4 hours. Cells from a 1 L culture were harvested by centrifugation and resuspended in 10 ml "binding buffer" (BB) (20 mM Tris HCl, 0.5 M NaCl, 15 mM imidazole, pH 8.0) and lysed in a French pressure cell at 11,000 pounds/inch² (13). The lysate was centrifuged at 40,000 x g for 15 min and the supernatant filtered through a 0.45 μ m filter. A 1 ml iminodiacetic acid ~~Sephacrose~~ SEPHAROSE column (Sigma, St. Louis, MO) was charged with 75 mM NiCl₂ 6H₂O and equilibrated with BB. The filtered supernatant was applied to the column and washed with 10 volumes of BB, then 10 volumes of BB containing 60 mM imidazole. The bound proteins were eluted with BB containing 200 mM imidazole, dialyzed against PBS containing 10 mM EDTA, then dialyzed against PBS (13). Protein concentrations were determined by the Bicinchoninic Acid (BCA) Protein Assay (Pierce) and proteins were stored at -20°C until use.--

Status of Claims

- 4) Claims 17 and 19-21 have been amended via the amendment filed 05/18/06.
Claims 17-21 have been canceled via this Examiner's amendment.
New claims 22-25 have been added via this Examiner's amendment.
Claims 22-25 are pending and are under examination.

Information Disclosure Statement

- 5) Acknowledgment is made of Applicants' Information Disclosure Statement filed 05/18/06. Except for the two non-patent references which have already been considered via the IDS filed 06/17/02, the information referred to therein has been considered and a signed copy is attached to this Office Action.

Objection(s) Withdrawn

- 6) The objection to the specification made in paragraph 7 of the Office Action mailed 06/29/04 and maintained in paragraph 5 of the Office Action mailed 04/18/05 is withdrawn in light of the amendments made to the specification via this Examiner's amendment.

Rejection(s) Moot

- 7) The rejection of claim 19 and the claim(s) dependent therefrom made in paragraph 10 of the

Office Action mailed 04/18/05 under 35 U.S.C. § 112, first paragraph, as containing new matter, is moot in light of cancellation of the claim via this Examiner's amendment.

8) The rejection of claim 17 made in paragraphs 12(a) and 12(c) of the Office Action mailed 04/18/05 under 35 U.S.C. § 112, second paragraph, as being indefinite, is moot in light of cancellation of the claim via this Examiner's amendment.

9) The rejection of claim 20 made in paragraph 12(b) of the Office Action mailed 04/18/05 under 35 U.S.C. § 112, second paragraph, as being indefinite, is moot in light of cancellation of the claim via this Examiner's amendment.

10) The rejection of claim 21 made in paragraph 12(e) of the Office Action mailed 04/18/05 under 35 U.S.C. § 112, second paragraph, as being indefinite, is moot in light of cancellation of the claim via this Examiner's amendment.

11) The rejection of claim 19 made in paragraph 12(d) of the Office Action mailed 04/18/05 under 35 U.S.C. § 112, second paragraph, as being indefinite, is moot in light of cancellation of the claim via this Examiner's amendment.

12) The rejection of claims 18 and 20 made in paragraph 12(f) of the Office Action mailed 04/18/05 under 35 U.S.C. § 112, second paragraph, as being indefinite, is moot in light of cancellation of the claims via this Examiner's amendment.

13) The rejection of claims 19 and 21 made in paragraphs 12(a) and 12(c) of the Office Action mailed 04/18/05 under 35 U.S.C. § 112, second paragraph, as being indefinite, is moot in light of cancellation of the claims via this Examiner's amendment.

14) The rejection of claims 17-21 made in paragraph 11 of the Office Action mailed 04/18/05 under 35 U.S.C. § 112, first paragraph, as 35 U.S.C. § 112, first paragraph, as being non-enabled, is moot in light of cancellation of the claims via this Examiner's amendment.

Remarks

15) Claims 22-25, now renumbered as claims 1-4, are allowed.

16) Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Fax number (571) 273-8300, which receives transmissions 24 hours a day and 7 days a week.

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17) Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAG or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.Mov>. Should you have questions on access to the Private PAA system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

18) Any inquiry concerning this communication or earlier communications from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (571) 272-0854. A message may be left on the Examiner's voice mail system. The Examiner can normally be reached on Monday to Friday from 7.15 a.m. to 4.15 p.m. except one day each bi-week, which would be disclosed on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lynette Smith, can be reached on (571) 272-0864.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

August, 2006


S. DEVI, PH.D.
PRIMARY EXAMINER